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THE REMOVAL OF ADENOID GROWTHS FROM THE VAULT OF THE PHARYNX.[1]

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NEW YORK.

THERE seems to be such diversity of opinion amongst rhinologists as to the best way of removing adenoid tissue from the vault of the pharynx, that I shall endeavor in this article to emphasize the advantages of one particular instrument as compared with others, and to attract the attention of such as are unfamiliar with its use by tracing the steps of the operation necessary for its successful completion.

The instrument is one that was devised by Dr. Gradle, of Chicago, and given to the profession some two years ago; it is known as the Gradle forceps. I will not enter into a minute description of the instrument, but think on inspection some of its claims for consideration will be apparent. I base my conclusions on one group of twenty-nine cases upon which I have operated during the past year, at the Manhattan Eye and Ear Hospital. As most of the subjects for operation are children under the age of twelve years, it seems to me absolutely necessary, for a complete removal of these growths at one time, that the patients should be etherized to the extent

[1] Read before the Section in Laryngology and Rhinology of the New York Academy of Medicine, January 27, 1892.

of abolishing the reflexes. It hardly seems requisite to enter a plea here for the use of general anesthesia, as who amongst us has not seen the terror depicted on the faces of our little patients when brought back for a second introduction of the forceps, when only cocaine had been previously employed. Certainly the time involved—from ten to twenty minutes—in administering ether and completing the operation is well spent, when one considers that henceforth, so far as that condition is concerned, one will not again have to operate on that child. The objection most frequently urged against general anesthesia in these cases, is the possibility of asphyxiation from blood or vomited matter finding its way into the larynx. This bugbear appears to have been given too great prominence, as in an experience of at least one hundred and fifty cases I have never seen the slightest inconvenience resulting. It should be remembered that by the time the mouth-gag has been adjusted and the usual digital examination made to locate the mass—meanwhile the patient inhaling pure air—we have only the primary stage of anesthesia to deal with. Such being the case, any substance is much more apt to find its way into the stomach than into the windpipe. In addition to this, the patient being in the dorsal position, with head extended and brought well over the end of the table, but little danger or difficulty will be encountered.

In reference to the location of adenoid growths occurring in the naso-pharynx of children, it appears to me that one is likely to get an erroneous impression from the text-books and special articles on that subject. Especially is this true when the symptom of mouth-breathing is not decidedly marked or exaggerated. On this account, having swept the choanæ with the forefinger and thus discovered their patency, one may be inclined to doubt the original diagnosis. Experience leads me to believe that more than 90 per cent. of the well-defined groups of adenoid tissue in children lie at a considerable

distance behind the free margin of the vomer, and not in close proximity to it.

Criticism has frequently been made by the casual observer that the antero-posterior dimensions of the Gradle instrument seem too large for introduction into a small child, and that the blades are too short to reach the vault of an adult pharynx. In explanation of the first objection, it is only required to add that the instrument is introduced sideways, closed, and under the guidance of the forefinger of the left hand, at the same time drawing forward the relaxed velum. The feasibility of reaching the most distant part of the adult vault is easily demonstrated on a skull. The blades having passed behind the velum and being allowed to open, will be found perfectly free and movable. The growth having been included and firm upward pressure being exerted, it is removed *en masse* by a closing and twisting movement of the handles. As in tonsillotomy, the more force and power brought to bear, the more complete the result. There is absolutely no danger of wounding the surrounding parts, by an operator who is familiar with their anatomy. The hemorrhage is fairly free for a moment, but ceases spontaneously. It is seldom necessary to reintroduce the forceps, and any remaining roughness may be smoothed down with the finger-nail. The patient is then rolled over, face downward, and such blood as may have accumulated in the mouth and nasal chambers is allowed to escape. By this time consciousness usually returns, and the patient is able to proceed homeward in the course of half an hour, with instructions to keep perfectly quiet for twenty-four hours. After-treatment in the way of sprays, etc., has been abandoned, as the children seem to do as well without it.

The action of the forceps is a combination of both the cutting and torsion methods. The greater proportion of the growth is cut through, and the remaining slight attachment twisted off. It scarcely seems essen-

tial to contrast the Gradle forceps with the numerous other instruments at our command, when we consider its simplicity and perfect adaptability to the purpose. Other devices seem clumsy or futile in comparison, when the number of introductions and small amounts of tissue removed each time are remembered. In making so sweeping an assertion as this, I feel sure of arousing the objection of a number of gentlemen who have found the Gottstein curette sufficient to meet their wants. Unquestionably the Gottstein is a most valuable instrument, and approaches the Gradle more nearly in usefulness than any of the others. The latter, however, possesses a few minor advantages in addition that would seem to make it preferable, namely, as introduced, closed, it occupies far less space and is more readily directed to any portion of the cavity, finds its way more deeply into the base of the growths, and, what to my mind is very satisfactory, retains the extirpated mass in the grasp of the blades until withdrawn. This is not true of the Gottstein, the severed tissue generally being lost and swallowed by the patient. Although hemorrhage is usually unimportant in these cases, unless we have to do with a "bleeder," yet I have observed that it is always more profuse after the use of the Gottstein curette. My query then is: What is left to be desired in an instrument that removes so large a mass at one effort, with safety and rapidity?

In this collection of cases the age ranged from two years to twenty-four years. The symptoms were those commonly observed in obstructive nasal respiration: vacuous expression, mouth-breathing, restless sleep with snoring, impaired hearing and quality of voice, more or less irritative cough, and a generally anemic appearance. Of these twenty-nine cases of adenoids of the vault, twelve, or nearly one-half, were accompanied by hypertrophied tonsils, which were removed at the same sitting but previous to the performance of the adenotomy. The

patients have recently been examined, and, without exception, the results have been very gratifying. The amelioration of symptoms was apparent within the first few days. In fact, the usual report of the parent has been, that "the child slept better on the first night after operation than it had done since first troubled with catarrh." It occasionally happens, however, that a week or ten days' time will be required to demonstrate any marked improvement. This, I presume, may be accounted for by the fact that in such cases the hypertrophied glandular tissue is distributed over a larger area, and the increased mechanical interference necessary for its removal causes a more marked inflammatory reaction.

DISCUSSION.[1]

DR. C. H. KNIGHT, the Chairman, said he was an ardent admirer of the Gradle forceps, and could indorse all that had been said in its favor by Dr. Butts. He had used it for a long time, and preferred it to all others, especially in those cases in which the lymphoid tissue is aggregated in the vault of the pharynx. Various forms of curette and the finger-nail will oftentimes be found useful and necessary to complete an operation, the major part of which has been accomplished with the Gradle forceps.

DR. S. O. VANDER POEL said: It gives me great pleasure to indorse the remarks of the reader of the paper as to the use of the Gradle forceps; for in my hands it has proven itself a most serviceable instrument, accomplishing the entire extirpation of these growths in a quicker and more satisfactory manner than any other single instrument. In order to render it efficient, it be-

[1] This discussion was received too late to be included with the article as it originally appeared in THE MEDICAL NEWS.

comes necessary, after the blades have been passed behind the palate and permitted to spring apart, to press the forceps with the forefinger of the left hand well up into the pharyngeal vault, using considerable force. This is done to engage the larger part, if not the entire growth, and makes but one introduction of the forceps necessary. One caution should impress itself upon the operator—do not depress too far the handles of the instrument, remembering that the shank of the blade is short, but keep them as near as possible to the upper teeth, for by so doing you avoid injuring the nasal septum. As the Chairman has stated that the discussion is not to be confined to the subject-matter of the paper, but will embrace the entire subject of adenoids, I would ask your permission to briefly refer to one or two points. It is my belief that a large percentage of the cases of deafness found in adult life, in which there is chronic catarrhal otitis, is due to neglected adenoid vegetations occurring in childhood. The natural course for these growths to pursue, as the subject approaches adult life, is atrophy, but in this very atrophic process lies the danger of permanent naso-pharyngeal disease. It is true the patient may no longer be a mouth-breather, and the various symptoms attendant upon improper nasal respiration may to a large extent have disappeared, but in their stead is left a diseased mucous membrane, which means a pretty constant naso-pharyngeal catarrh. Now just how this affects the Eustachian tube is as yet not definitely determined. It is asserted that it is the pressure of these adenoids on the Eustachian orifice that primarily induces the ear-disease; again, by others, and to my mind in a more plausible manner, that it is the interference with the renewal of the air in the middle chamber of the ear, caused by their presence in the pharynx. An interference with the air-current in the nasal passages causes a stagnation in the pharyngeal vault, and of necessity a certain amount of rarefication of air in that region. Blake, of Boston, on

the other hand, believes that the ear becomes implicated through a hyperemia set up in the middle ear, by interference with the return venous circulation, on account of the superficial pressure exercised on the superficial veins by the morbid growth. No matter which of these theories be the correct one, the fact remains that in a fairly large percentage of adenoids the ear becomes involved during childhood, and if not relieved by operation during that period the subject will carry a damaged ear for the remainder of his life, notwithstanding the fact that the adenoids have, of themselves, long since disappeared. In conclusion, I desire to refer to the condition of anemia so frequently met with in sufferers from adenoids. It has been my practice for some time to examine with the hemoglobinometer the blood of these patients when they first come under my observation, with a view of determining the degree of anemia, and if excessive relieve the condition preparatory to an operation. The hemorrhage attendant upon this operation, as you all know, is not inconsiderable, and it frequently takes our little patients some months to recuperate after the severe loss of blood. It has been suggested that if the percentage of hemoglobin be raised preparatory to operating, the amount of hemorrhage might be lessened and the period of convalescence shortened. In practice, I have found it rather difficult to raise the amount of hemoglobin in the blood of these patients, which frequently does not register more than 65 or 70 on the scale, notwithstanding a two weeks' course of iron. But it is my belief that the hemorrhage attendant upon the operation is somewhat diminished by the preliminary administration of some preparation of iron.

DR. JONATHAN WRIGHT: Gradle's forceps has never been successfully used by me, but in the face of the very large pieces of tissue removed by others, I am inclined to think my failure due, in some cases, to lack of skill and experience with the instrument. Nevertheless, I am

positive that in the majority of cases, especially in children, the growths in the post-nasal space are too diffused, scattered over the roof, the posterior and lateral walls, to be removed at all thoroughly by one grasp of any one instrument. I can well believe that in concrete growths, *i. e.*, when the pharyngeal tonsil itself only, or principally, is the lymphoid growth that is hypertrophied, that Gradle's forceps is a very efficient instrument in experienced hands, better, perhaps, than any other. When the patient is on his back, and the head is allowed to fall over the end of the table, the anterior cervical veins are necessarily compressed, the face becomes livid, and I believe hemorrhage is much greater. It is better to turn the patient on his side after the instruments have been removed and the operation finished, or suspended for a moment on account of the hemorrhage. I always recommend etherization to primary anesthesia in children; never to those old enough to control their faucial muscles and their apprehensions, because even a tractable child, although allowing the first introduction of the forceps, becomes frightened at the bleeding and the choking if not at the pain, and subsequent attempts are nearly always unsatisfactory. A complete operation, I believe, we can never be sure of without the use of the post-nasal mirror and repeated sittings. When the post-nasal space is filled with blood-clots, the finger is not a reliable guide, nor is the eye. Subsequent examination with the mirror will nearly always show some masses not removed, and in my experience by far the most satisfactory way is by aid of the mirror and several sittings in adults. This is impracticable in children, and we must be as thorough as possible, with the finger as a guide under ether. A number of cases of serious hemorrhage and one or two deaths have come to my notice from reading or from the accounts of others, in which the bleeding was undetected on account of sleep after deep ether-narcosis. This is another strong reason for using

primary anesthesia, beyond the danger of blood in the trachea during the operation. In the dispensary I always insist on the patient going into the hospital for the night after the operation, or the patient is visited at his house by an assistant; this applies principally to ether-cases, although I had one very severe hemorrhage in an adult in which the post-nasal space had to be plugged.

Dr. J. E. Nichols thought the position of the growth of more importance than the quantity. Two positions were especially detrimental to hearing: first, where the tumor occupied the fossa of Rosenmüller and pressed on the posterior lip of the Eustachian orifice; and, second, where it lay near the choana and pressed downward and backward on the orifice. Such portions were frequently left in an ordinary operation, and perpetuated the catarrhal disturbance of the Eustachian tube, unless particular care was taken to press the blades of the forceps up into the sulcus between the tumor and the Eustachian prominence. In using any form of instrument modelled like the Gradle forceps, care should always be taken to press the shank closely against the upper teeth and the cutting blades well up into the vault, otherwise the cutting beak would be brought too far forward and a piece of the septum cut away.

Dr. C. A. Bucklin said that his observations on adenoids had been entirely in connection with defective hearing. Purely on the ground of experimental research he had tested patients having catarrhal otitis as the result of adenoids, under every possible state of inflation, and credited them with the best obtainable hearing previous to operation. After operation he had credited them with such hearing as could be obtained without inflation. The improvement in hearing, as measured by the watch, had varied from 300 to 1200 per cent. When adenoids can be removed with one or two grasps of any kind of forceps, the instrument must be in skilled hands;

under these circumstances, he fully indorsed the instrument and operation described

Dr. R. C. Myles would insist on thoroughly removing the abnormal parts of growths, no matter what methods were resorted to. With young children he placed the patient face downward, with head extended beyond the edge of table, and operated from below. He preferred Lowenburg's instrument or some modification for general use, and did not think the Gradle forceps would be suitable in all cases. When the hypertrophy was confined to the central or large third tonsil, the Gradle instrument or one acting similarly was very effective in removing a large section or when used for the first insertion. His case of adenoid forceps contained seven patterns, and he often used different ones in the same operation.

Dr. W. C. Phillips believed in using the instrument that was best adapted to the individual case. The Gradle instrument was the best one to use when the adenoids were centrally located and compact, so that the entire mass could be grasped by the instrument, but he would not use it in cases in which the growth was scattered over the vault and posterior wall of the pharynx. The Gradle instrument should never be used by beginners, as great harm could be done with it. He did not think it necessary to etherize all cases, and would prefer operating by repeated sittings, if the patient would keep quiet and allow it. He had operated on babies under one year of age without ether. He said that voice-symptoms were not always present, and agreed with the reader of the paper that mouth-breathing was often absent in these cases.

Dr. Gorham Bacon said that he was very glad to have had the opportunity of listening to this most instructive paper, as he was particularly interested in the subject of adenoids. He made it a point to examine the naso-pharynx of every patient suffering from ear-disease.

Since he had been looking for these growths, he had found them in a great number of cases, more especially in children who are suffering from acute catarrhal or suppurative otitis media. It is impossible to cure cases of deafness when these vegetations exist, unless they are first removed. He had not used the Gradle forceps, but his assistant, Dr. Hewitt, had done so in a number of cases at his clinic at the New York Eye and Ear Infirmary, and he certainly intended giving them a trial himself.

DR. W. K. SIMPSON said that the success of the operation depends not only on the individual instrument used, but on an accurate knowledge of the location of the adenoids. Feel for the posterior edge of the septum, and let that be your landmark from which to form your idea as to the situation of the growths.

DR. BUTTS, in closing the discussion, said that one of the principal reasons for making the Gradle forceps the subject of his paper was because he believed that its use was not generally and thoroughly understood, and that when failure followed its employment it was for this cause. In reply to the inquiry as to whether ether was employed in all cases, without regard to age, he stated that it was always used when the patient was less than fifteen years old, and for those older local anesthesia was induced by the application of cocaine in strong solution. In this group of cases, all but three were etherized. Of course, it was desirable to keep the patients quiet for twenty-four hours after operation, to avoid secondary hemorrhage, but it was not always possible to allow them to remain in the hospital over night. However, no bad effects had ever been experienced by allowing the patient to return home at once. The large majority of these cases had been operated on more than six months ago, and all had been examined within the last four weeks. There had been no return of the growths, except in one instance. This case was that of

an English girl, sixteen years of age, who gave a history of having had three adenotomies performed under chloroform, before coming to this country. He had subjected her to three more complete removals of the morbid growths at intervals of two months, and twice the hypertrophied glandular tissue had returned on the same site. The last operation, however, was apparently successful, as four months had elapsed with no return of the condition. For some time the new growths were regarded as exuberant granulations, but examination after removal proved them to be composed of lymphoid cells. He exhibited a large specimen of adenoid tissue as evidence of what the Gradle forceps could accomplish at one introduction when properly used, and considered the finger-nail as the most useful and, as a rule, only needful adjunct to the instrument in completing the operation.

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